CUSTOMISATION OF AN ELECTRONIC DEVICE

FIELD OF THE INVENTION

Embodiments of the present invention relate to the customisation of an

5   electronic device, such as a mobile cellular telephone.

BACKGROUND OF THE INVENTION

US5479476 describes a mobile cellular telephone that has a plurality of

10   user adjustable operating characteristics such as the sound volume, the
ringing tone type, and whether features such as key tones, warning tones,
lights and call transfer are on or off. The user can adjust the operating
characteristics of the phone en masse by selecting one of a plurality of
groups of pre-set values for the operating characteristics.

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US 2003/0017848 describes personalizing an electronic device by
attaching one of a number of different interchangeable covers, each of
which has its own theme. Each cover has an embedded electronic
component that provides theme oriented features in the electronic device.

20   The theme oriented features may include a ring tone, games, a screen
saver, and a default voice mail greeting. The embedded electronic
component may also transfer to the electronic device names, phone
numbers, resource server specifications, email addresses, and media
content such as animation, audio or video. Interchanging covers of the

25   electronic device changes the theme of the electronic device.

These documents describe the customisation of an electronic device, such
as a mobile cellular telephone, by varying the manner of presentation by
the device and the data available for use in the device.

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The documents do not however address a current problem in mobile
electronic devices. As mobile electronic devices get smaller and more

feature rich, they become increasing more difficult to use. In particular, the menu of a device becomes complex and difficult to navigate. This is exacerbated when the menu is designed as a 'flat' hierarchy so that all menu options are accessible within a minimum number of keystrokes.

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BRIEF SUMMARY OF THE INVENTION

According to one aspect of the present invention there is provided a mobile electronic device comprising: a memory for associating a first location with

10   a first plurality of operating characteristics; detection means for automatically detecting when the mobile device is at the first location; adoption means for adopting the first plurality of operating characteristics when the mobile device is at the first location; and a controller, for controlling the operation of the electronic device at least partially in

15   accordance with the adopted operating characteristics.

According to another aspect of the present invention there is provided a method of customising a mobile electronic device, comprising the steps of: associating a first plurality of operating characteristics for the mobile device

20   with a first location;
detecting the location of the mobile electronic device; adopting the first operating characteristics in the mobile electronic device when it is located at the first location; and controlling the operation of the mobile electronic device at least partially in accordance with the adopted operating

25   characteristics.

According to a further aspect of the present invention there is provided an electronic device, having a plurality of user selectable options, comprising: a user interface having a display and a user input device;

30   a memory for defining a first theme and a second theme, wherein the first theme defines how an electronic device is controlled by the user input to select an option when the first theme is adopted by the electronic device

and the second theme defines how an electronic device is controlled by the user input to select an option when the second theme is adopted by the electronic device;

selection means for selecting said first theme or said second theme for
5   adoption by the electronic device; and

a controller, for controlling the operation of the electronic device at least partially in accordance with the adopted one of the themes.

According to another aspect of the present invention there is provided a
10   method of customising the manner in which an electronic device, having a plurality of user selectable options, is controlled by a user to select an option, comprising the steps of: providing a first theme defining how an electronic device is controlled by a user to select an option when the first theme is adopted by the electronic device; providing a second theme that
15   defines how an electronic device is controlled by the user to select an option when the second theme is adopted by the electronic device; and selecting the first theme or the second theme for adoption by the electronic device.

20   According to another aspect of the present invention there is provided a mobile electronic device, having a plurality of user selectable options, comprising:

a user interface having a display and a user input device; a memory for associating a first theme with a first location, wherein the first theme
25   defines how an electronic device is controlled by the user input to select an option when the first theme is adopted by the electronic device; detection means for automatically detecting when the mobile device is at the first location; selection means for selecting said first theme for adoption by the electronic device when the mobile device is at the first location; and a
30   controller, for controlling the operation of the electronic device at least partially in accordance with an adopted theme.

According to another aspect of the invention there is provided a method of customising the manner in which an electronic device, having a plurality of user selectable options, is controlled by a user to select an option,

5   comprising the steps of: providing a first theme defining how an electronic device is controlled by a user to select an option when the first theme is adopted by the electronic device; detecting when the mobile electronic device is at a first location; and
adopting the first theme when the mobile electronic device is located at the

10   first location.

BRIEF DESCRIPTION OF DRAWINGS

For a better understanding of the present invention reference will now be

15   made by way of example only to the accompanying drawings in which:
Fig. 1 illustrates a mobile electronic device.

DETAILED DESCRIPTION OF EMBODIMENT(S) OF THE INVENTION

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Fig. 1 illustrates a mobile electronic device 10 that can be customized to have a particular set of operational characteristics by the adoption of a particular theme.

25   A theme is data and/or programming instructions defining a set of operating characteristics for the mobile electronic device. When the mobile electronic device adopts a theme it adopts the operating characteristics of that theme.

A theme may affect the form of the adopting device. 'Form' is this context

30   means the manner of presentation by the adopting device and includes aesthetic aspects, for example, color scheme, wallpaper, screen saver and

icons, and behavioural aspects, for example, the type and volume of alerts used by the device.

A theme may affect the content of the adopting device. 'Content' is this
5   context means data available for use in the device and includes software applications, for example games, and application data, for example, reminder/calendar notes, contact information, URLs, bookmarks etc that are used in existing software applications.

10   A theme may affect the control of the adopting device. 'Control' in this context means how the device is controlled by the user input to select an option such as a function, setting or application. The adoption of such a control theme may for example, modify the menu structure of the device. This may improve the accessibility of particular options to a user or may
15   add or subtract options.

The modification of the menu structure may result in a change to the hierarchical structure to the menu so that the user has to perform a first series of keystrokes to choose a particular menu option when a first theme
20   is adopted but has to perform a second, different series of keystrokes to choose the same menu option when a second theme is adopted. Certain options that are likely to be used when the device has adopted a first theme may be promoted to a higher level in the menu structure so that they can be chosen with fewer keystrokes while other options which are unlikely to
25   be used when the device has adopted the first theme may be demoted to a lower level of the menu structure.

The modification of the menu structure may also result in a different menu content such that the menu structures for different themes have different
30   options available for selection by the user.

Thus applications resident in the mobile electronic device may be hidden to a user on adopting a theme by adapting the menu structure.

5   Fig. 1 illustrates the mobile electronic device 10, in this example a mobile cellular telephone, comprising: a memory 12, a controller 14, a location detector 16, an alert device 18, a radio transceiver 20 and a user interface 30.

10   The controller 14 is connected to read from and write to memory 12. It is connected to receive inputs from each of the user interface 30, the location detector 16 and the radio transceiver 20. It is connected to provide output to the user interface 30, the alert device 18 and the radio transceiver 29. The controller 14 is a programmed processor and the operation of the

15   mobile electronic device, as described, is determined by the program instructions loaded into the processor, for example, from a computer program embodied on a record carrier.

The user interface 30 includes a display 32 and a user input device 34. The

20   display is controlled by controller 14 to display a menu that enables the operation of the mobile electronic device 10 by a user. The menu is hierarchical structure that includes a plurality of user selectable options. The user input device 34 may be used to navigate through the hierarchical structure to find and select a desired option.

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The alert device 18 is controlled by the controller 14 to gain the attention of the user. The alert device may be a loud speaker that is capable of producing ring tones or it may be a vibrator capable of vibrating the mobile electronic device 10.

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The location detector 16 is capable of automatically detecting the location of the mobile electronic device. It may be, for example, a Global Positioning

System (GPS) chip. Alternatively, it may determine the identification of the cell (cell ID) in which the mobile cellular telephone 10 is location from the communications received at the radio transceiver 20. The detector provides the detected position to the controller 14. The position may be a relative

5   position such as a cell ID or an absolute position such as a grid reference.

The memory 12 contains a database of themes. The database stores a plurality of themes including a first theme and a second theme.

10   The first theme defines a first set of operating characteristics for the mobile electronic device, that are adopted when the mobile electronic device 10 adopts the first theme. The second theme defines a second, different set of operating characteristics for the mobile electronic device, that are adopted when the mobile electronic device 10 adopts the second theme.

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The database also stores a plurality of location identifiers including first location identifier(s) and second location identifier(s). The first and second locations are mutually exclusive.

20   The database has a first association between the first location identifier(s) and the first theme and a second association between the second location identifier(s) and the second theme.

An interrogation of the database using the first location identifier or one of

25   the first location identifiers returns the first theme and an interrogation using the second location identifier or one of the second location identifiers returns the second theme.

The mobile electronic device 10 is operable to automatically adopt the first

30   theme when the mobile electronic device 10 is at the first location and to automatically adopt the second theme when the mobile electronic device 10 is at the second location. Thus the form and/or content and/or control of

the mobile electronic device 10 may be optimized for location. In particular the menu may be optimised for the location.

The controller 14 receives the location identifier from the location detector 16 and interrogates the database in the memory 12.

If the mobile electronic device 10 is located at the first location, the database returns the first theme, which is automatically adopted by the controller 14. The operation of the electronic device 10 is then controlled at least partially in accordance with the adopted operating characteristics of the first theme. If the mobile electronic device is not located at the first location, the first theme is not adopted and the default theme remains in use.

If the mobile electronic device 10 is located at the second location, the database returns the second theme, which is automatically adopted by the controller 14. The operation of the mobile electronic device 10 is then controlled at least partially in accordance with the adopted operating characteristics of the second theme. If the mobile electronic device 10 is not located at the second location, the second theme is not adopted and the default theme remains in use.

The mobile electronic device 10 is operable to automatically un-adopt an adopted theme when the mobile device leaves the location(s) associated with the presently adopted theme. The controller 14 receives the location identifier from the location detector 16 and interrogates the database in the memory 12. If the mobile electronic device 10 has, for example left the first location while adopting the first theme, the database returns a null value and the default theme is adopted replacing the first theme. If the mobile electronic device 10 has, for example left the first location while adopting the first theme and entered the second location, the database returns the second theme which is adopted replacing the first theme.

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The mobile electronic device 10 may additionally or alternatively be operable to adopt a theme in response to user action instead of location. For example, a user may select one of a plurality of available themes from the menu.

The radio transceiver 20 may be used to download themes to the mobile electronic device 10. The themes are downloaded as a data structure 22.

An example application of the electronic device 10 will now be described. As a user enters a fun park with a theme such as Disney World™, the user's mobile cellular telephone is either pushed with a fun park theme or is instructed to download a fun park theme. The fun park theme consists of, for example, Mickey Mouse™ wallpaper for the telephone, the signature tune from Little Mermaid™ as a ringing tone, a game including a Donald Duck™ game in which the user can win a prize and a complete schedule of the special attractions and shows available that day (and perhaps the next few days as well), and a listing of the up and coming attractions that is stored in the telephone's Calendar application. When the user exits the fun park, the telephone prompts the user whether or not to return to the telephones original theme. As a season ticket holder enters the fun park, the users telephone senses that it is entering and downloads the week's theme consisting of wallpaper, color scheme, game, reminders, ringing tone etc. As the user exits, the user is prompted whether to keep or delete the new theme. In both of these cases it is possible to have new contacts added to the telephones list of telephone numbers, either in order or at the top. These new contacts could include the 'lost and found' department, an information centre and an emergency centre. The user interface of the telephone could also be changed to make certain applications or data more accessible.

Although embodiments of the present invention have been described in the preceding paragraphs with reference to various examples, it should be appreciated that modifications to the examples given can be made without departing from the spirit and scope of the invention.

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